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**DURHAM
16236**

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SPECIAL PROVISION**SECTION 670 -- MISCELLANEOUS INCIDENTALS****Item 670.10_ - Temporary Lighting
Item 670.10X - Temporary Portable Lighting****Description**

1.1 Work shall consist of furnishing, installing, maintaining (including power) and removing temporary stationary lighting. This includes poles, bracket arms, luminaires, photo cells, and wiring as described herein, shown on the plans, or as ordered.

1.1.1 This work shall include either, the installation of a temporary metered service in accordance with the local utility standards, or providing and maintaining a power source(s) adequate for the requirements and duration of the lighting.

1.2 Work shall consist of furnishing, maintaining, relocating and the removal of temporary portable lighting provided by portable light towers as described herein, shown on the plans, or as ordered.

1.2.1 This work shall include providing and maintaining a power source(s) adequate for the requirements and duration of the lighting.

Materials**2.1 Temporary Lighting.**

2.1.1 Fiberglass poles shall be direct burial with breakaway characteristics. The fiber-glass shall be constructed from ultraviolet resistant polyester resin and shall contain a minimum of 65% glass and 35% resin by weight. Poles shall be designed in accordance with the current AASHTO "*Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*" for a 100 mph wind speed and include safety breakaway supports capable of providing the nominal light mounting height specified in 3.1.4. The pole shall be tapered and the surface shall be uniform for the entire length of the pole. Poles shall be provided with a removable aluminum top cap.

2.1.1.1 Pole shall be pigmented silver and be of uniform color throughout the entire body of the pole.

2.1.1.2 Pole shall contain a minimum 2½ in. x 5 in. hand hole with a non-metallic cover attached with tamper resistant hardware. The hand hole shall be located approximately 12-18 in. above the ground line when installed and 90 degrees from the side intended for mounting of the arm.

2.1.1.3 Pole shall also contain a minimum 2 3/8 in. diameter conductor entrance located approximately 18 in. (300 mm) below grade after installation and 180 degrees from the side intended for mounting of the arm.

2.1.1.4 Pole shall be predrilled for bracket arm mounting.

2.1.1.5 A coating to provide additional ultraviolet and chemical resistance shall be applied at a minimum dry film thickness of 1½ mils. The surface shall meet the following requirements when tested for a minimum of 2500 hours of accelerated testing in accordance with ASTM 653 (UV-B Lamp 313 NM wave length 130° F, cycle lamp 4 hours on 4 hours off):

Fiber Exposure	None
Crazing	None
Checking	None
Chalking	None
Color	May dull slightly

2.1.1.6 Poles will be rejected if the pole contains any scratches, gouges or fraying deeper than one-half the wall thickness.

2.1.2 Wood poles shall be Class IV or higher capable of providing the nominal light mounting height specified in 3.1.4.

2.1.3 The bracket arm shall be aluminum one-piece seamless, round tapered tubes conforming to ASTM B 241 Alloy 6061 T6 or 6063 T6 with a 2 in. national pipe size (NPS) slip-filter.

2.1.4 Luminaires shall operate one 250-watt high-pressure sodium (HPS) lamp from a nominal 120 volt 60 hertz power source. The luminaire shall contain a pre-wired integral ballast and optical assembly that shall provide a full cutoff Type III IES distribution.

2.1.4.1 The luminaire shall contain a photoelectric control for automatic dusk to dawn operation of luminaire.

2.1.5 Temporary metered service equipment and wiring shall be in compliance with the National Electrical Code, local codes and utility requirements.

2.2 Temporary Portable Lighting.

2.2.1 Temporary portable light towers shall have a minimum tower height of 30 feet.

2.2.2 Lighting shall operate a minimum of two 250-watt lamps. Light system shall contain a ballast and shall provide an NEMA-6 beam spread.

2.2.2.1 Lights shall be full cut-off.

2.2.3 Temporary portable lighting shall contain an independent power source.

Construction Requirements

3.1 Temporary Stationary Lighting.

3.1.1 Poles placed within the clear zone and not behind barrier shall meet breakaway requirements of the aforementioned AASHTO Standard.

3.1.1.1 Poles placed behind barrier shall be located beyond the limits of barrier deflection.

3.1.2 Poles shall be buried a minimum of 20 percent of the mounting height.

3.1.3 Fiberglass poles shall be handled in accordance with manufacture's recommendations.

3.1.4 Lights shall be installed at a 35 foot mounting height on an 8 ft, 12 ft or 16 ft bracket arm as specified.

3.1.4.1 Lights shall be aimed directly down, unless otherwise specified, so as not to produce excess glare for the traveling public and to minimize the projection of light upward.

3.1.5 Temporary metered service and wiring shall be installed in accordance with the National Electrical Code, local codes and utility requirements.

3.1.5.1 The Design-Build Team shall obtain all necessary permits for the work and meet the requirements of all codes.

3.1.6 The power source will be determined by the appropriate electric utility owner if available, and the Engineer in the field.

3.2 Temporary Portable Lighting.

3.2.1 Light towers shall be placed as shown on the plans at the angle point in the concrete barrier.

3.2.1.1 Lights shall be aimed directly down, unless otherwise specified, so as not to produce excess glare for the traveling public and to minimize the projection of light upward.

3.2.2 The Design-Build Team shall insure that temporary portable lighting is installed as part of the temporary concrete barrier installation.

3.2.3 The Design-Build Team shall insure that temporary portable lighting is operating during night hours and not operating during daylight hours.

3.2.4 Power source shall maintain light operations for a minimum of 14 continuous hours (dusk to dawn).

3.3 If temporary lighting is proposed at locations other than as shown on the plans, the Design-Build Team shall submit plans for approval in accordance with 105.02 prior to the start of operations.

3.4 The Design-Build Team shall insure that temporary lighting is installed prior to disturbing traffic flow.

3.5 Temporary lighting shall be removed at the completion of the project or when no longer required.